Amendments to the Claims:

The following claim listing is intended to replace previous claim listings.

Claims 1 and 3 are amended.

Claims 15 and 16 are new.

Listing of Claims:

1. (Currently Amended) A hydrocarbon sensor comprising a substrate made of a solid electrolyte that conducts protons, and a pair of electrodes formed on the substrate,

wherein at least one electrode of the pair of electrodes contains Au and Al,

~~at least part of the Al is present in~~ elemental aluminum and aluminum oxide are present in the at least one electrode ~~as at least one selected from the group consisting of elemental aluminum and aluminum oxide~~, and assuming that a content of elemental Al in the at least one electrode is "a" mol%, and a content of aluminum oxide in the at least one electrode is "b" mol%, "a" and "b" satisfy a relationship: $a + 2b \leq 7$,

~~at least one of the elemental aluminum and aluminum oxide is contained in a mixed state in the at least one electrode,~~ and

the at least one electrode contains at least one metal selected from the group consisting of an $AuAl_2$ alloy and elemental Au, wherein the total mol% of the metals selected from the group is at least 50 mol%.

2. (Canceled)

3. (Currently Amended) A hydrocarbon sensor according to claim 1, wherein the at least one electrode contains $AuAl_2$ and elemental Au in a molar ratio of $AuAl_2$: Au = X : 1-X, where X is at least ~~0.6~~ 0.62 and ~~less than 1~~ at most 0.88.

4-13. (Canceled)

14. (Previously Presented) A hydrocarbon sensor according to claim 1, wherein the $AuAl_2$ alloy and the at least one of elemental aluminum and aluminum oxide are contained in a mixed state in the at least one electrode.

15. (New) A hydrocarbon sensor according to claim 1, wherein the at least one electrode and its lead are connected to each other via a conductive adhesive containing Pt and Au or a conductive adhesive containing Al and Au.

16. (New) A hydrocarbon sensor according to claim 1, wherein the at least one electrode and its lead are connected to each other via a conductive containing Al and Au, and

a component of the at least one electrode is the same as a component of metal contained in the conductive adhesive.